

A DESCRIPTION OF THE TOWNES COLLECTION OF HYMENOPTERA

Henry and Marjorie Townes
5950 Warren Road, Ann Arbor, Michigan 48105

The family of Henry and Marjorie Townes has a collection of insects that is increasingly used in research on Hymenoptera. This is a report on the collection, to provide information on the material it contains.

The entire collection contains approximately 793,000 specimens of insects, pinned and labeled. There is almost no material in alcohol, and only about 3,000 microscope slides. The slides preserve specimens parts, such as genitalia and wings, mounted for detailed study, not independent complete specimens. In the collection there are 447,371 Ichneumonidae, 60,112 Anomalidae (= Braconidae), and 135,851 other Hymenoptera. Outside of the Hymenoptera there are an estimated 150,000 specimens of other insect orders, including a reasonably good collection of Neuroptera and Mecoptera, a fair collection of Trichoptera (pinned), and the midges of the tribe Tendipedini that were used for H. Townes' revision of the Nearctic species of that tribe (1945. *Amer. Midland Nat.* 34: 1-206). The holdings of Diptera, Coleoptera, Lepidoptera, Hemiptera, and Homoptera, though respectable for a general reference collection, are of minor importance for research. The Ephemera, Odonata, Orthoptera, Dermaptera, and Plecoptera were given away in the years 1950 to 1956 and few specimens of those orders have accumulated since then.

In summary, the Townes Collection is now about 81% Hymenoptera and 56% Ichneumonidae.

The collection is located at 5950 Warren Road, Ann Arbor, Michigan, in a building constructed especially for it. It is contained in 150 cabinets of the style described by H. Townes in 1951 (*Coleopterists' Bul.* 5: 21-27). Each cabinet holds thirty boxes, 9 x 13 x 2 1/2 inches, of which about half are wooden Schmidt boxes, the rest cardboard boxes of the same size. The building also houses a library on insect taxonomy (especially Hymenoptera) and space and facilities for five taxonomists. The collection has always been in private ownership, with costs of housing and the addition of specimens borne by the owners.

The collection was started before 1930 at Greenville, South Carolina. By the end of 1933 it contained about 4,000 specimens from Greenville Co. and Horry Co. in South Carolina, from Transylvania Co., North Carolina and from a few other localities. It was strongest in Lepidoptera, Tipulidae, and Odonata.

In 1934, the collecting emphasis shifted to the Ichneumonidae and has remained there since, with secondary emphasis on other parasitic Hymenoptera and on sawflies and wasps.

HYMENOPTERA CONTENT OF COLLECTION

The number of specimens of each family of Hymenoptera are tabulated below. For this list the taxonomic limits of families and the family arrangement correspond to those in Krombein, et al., 1979, "Catalog of Hymenoptera in America North of Mexico." Although the taxonomy of the Catalog is used, it is not necessarily endorsed. The names of the families in the list below correspond with the usage in the Townes Collection, with the equivalents used in the Catalog given in parentheses.

Hymenoptera specimens in the Townes Collection by family,
as of December 1981

<u>Megalodontoidea</u> 556	<u>Eucharitidae</u> 507
<u>Xyelidae</u> 253	<u>Eupelmatidae</u> 426
Pamphiliidae 303	<u>Encyrtidae</u> 274
<u>Tenthredinoidea</u> 13, 339	<u>Eulophidae</u> 1, 755
<u>Pterygophoridae</u> 1, 157	<u>Mymaridae</u> 296
(= Pergidae)	<u>Cynipoidea</u> 4, 086
Cryptidae 1, 038	<u>Ibaliidae</u> 84
(= Argidae)	Liopteridae 15
Clavellariidae 126	Figitidae 923
(= Cimbicidae)	Eucoilidae 2, 399
Pteronidae 31	Alloxystidae 124
(= Diprionidae)	Cynipidae 591
Tenthredinidae 10, 987	<u>Evanioidea</u> 11, 339
<u>Siricoidea</u> 268	<u>Evaniidae</u> 7, 958
<u>Xiphydriidae</u> 65	Aulacidae 1, 275
Siricidae 91	Gasteruptiidae 2, 106
Orussidae 112	<u>Pelecinoidea</u> 255
<u>Cephoidea</u> 619	<u>Pelecinidae</u> 255
Cephidae 619	<u>Serphoidea</u> 15, 020
<u>Ichneumonoidea</u> 509, 557	<u>Roproniidae</u> 86
<u>Apozygidae</u> 1	Austroniidae 3
Anomalidae 60, 112	Monomachidae 375
(= Braconidae)	New family 1
Incubidae 1, 690	Heloridae 142
(= Aphidiidae)	Serphidae 4, 201
Hybrizontidae 67	Diapriidae 7, 583
Ichneumonidae 447, 391	Sparasionidae 2, 081
Stephanidae 288	(= Scelionidae)
Megalyridae 28	Platygastridae 548
<u>Chalcidoidea</u> 13, 239	<u>Ceraphronoidea</u> 275
<u>Callimomidae</u> 1, 340	<u>Ceraphronidae</u> 71
(= Torymidae)	Megaspilidae 204
Pteromalidae 3, 745	<u>Trigonaloidea</u> 340
Eurytomidae 939	<u>Trigonalidae</u> 340
Chalcididae 3, 828	<u>Chrysidoidea</u> 12, 381
Leucospidae 129	<u>Plumariidae</u> 190
	Bethylidae 5, 928

Clystopsenellidae 19 (= Scolebythidae)	<u>Sphecoidea</u> 13, 396
Sclerogibbidae 118	Ampulicidae 209
Chrysididae 2, 354	Sphecidae 1, 909
Dryinidae 3, 613	Pemphredonidae 2, 082
Embolemidae 159	Astatidae 117
<u>Scolioidea</u> 15, 527	Larridae 3, 465
Tiphiidae 9, 574	Crabronidae 2, 739
Sierolomorphidae 149	Mellinidae 22
Mutillidae 4, 802	Bembicidae 1, 820 (= Nyssonidae)
Scoliidae 795	Philanthidae 1, 033
Sapygidae 207	<u>Apoidea</u> 5, 062
<u>Formicoidea</u> 1, 894	Hylaeidae 827 (= Colletidae)
Formicidae 1, 894	Andrenidae 397
<u>Vespoidea</u> 5, 998	Halictidae 1, 967
Masaridae 107	Mellitidae 10
Eumenidae 1, 933	Megachilidae 440
Vespidae 3, 958	Lasiidae 1, 033 (= Anthophoridae)
<u>Psammocharoidea</u> 20, 183	Apidae 388
Psammocharidae 19, 820 (= Pompilidae)	
Rhopalosomatidae 355	
	Total Hymenoptera 643, 334

Since the numbers of Anomalidae and Ichneumonidae are very large, the holdings of these two families are listed by subfamily. The subfamily limits (but not always the names) are as in the 'Catalog of Hymenoptera of America North of Mexico', except that the Stilbopinae are separated from Banchinae (Ichneumonidae).

Specimens of Anomalidae (= Braconidae) in the Townes Collection,
as of December 1981

Spathiinae 3, 854 (= Doryctinae)	Opiinae 2, 225
Vipiinae 8, 097 (= Braconinae)	Alysiinae 3, 902
Hormiinae 943 (= Exothecinae)	Sigalphinae 49
Rogadinae 6, 214	Anomalinae 5, 404 (= Cheloninae)
Meteorideinae 10	Adeliinae 12
Helconinae 1, 079	Microgastrinae 13, 002
Zelinae 479	New subfamily 16
Macrocentrinae 2, 346	Ichneutinae 542
Amicrocentrinae 4	Blacinae 3, 869
Xiphozelinae 3	Neoneurinae 21
Braconinae 4, 083 (= Agathidinae)	Leiophroninae 3, 958 (= Euphorinae)

Total Anomalidae 60, 112

Specimens of Ichneumonidae in the Townes Collection,
as of December 1981

Ephialtinae 24,398	Cremastinae 9,970
Tryphoninae 24,445	Phrudinae 149
Eucerotinae 668	Tersilochinae 3,458
Labiinae 1,556	Ophioninae 12,295
Adelognathinae 529	Mesochorinae 7,744
Xoridinae 1,684	Metopiinae 10,085
Agriotypinae 4	Anomaloninae 8,288
Gelinae 110,103	Acaenitinae 791
Lycorininae 275	Microleptinae 15,258
Stilbopinae 136	Orthopelmatinae 324
Neorhacodinae 7	Collyriinae 84
Banchinae 23,884	Orthocentrinae 10,818
Scolobatinae 23,459	Diplazontinae 10,021
Porizontinae 70,048	Ichneumoninae 76,890

Total Ichneumonidae 447,371

GEOGRAPHIC AREAS REPRESENTED

There are notes on the origin of the lots coming into the collection, especially the specimens of Ichneumonidae. For the ichneumonids one can compile a list of the countries of origin of most of the specimens, and the origins of the ichneumonids are a good indication of the origins of the specimens of other families, which were generally collected at the same times and places. In many cases the count of ichneumonids per country is precise, in others the number is given as a round number (estimated). The tabulations from different localities is inexact because numerous small lots were not accessioned, because of attrition by gifts, and the increased variety of locations resulting from exchanges. The tabulation below totals only 439,623 ichneumonids while a count of the collection shows it to contain 447,371 (plus 1,639 holotypes).

Origins of the specimens of Ichneumonidae

North America (Ichneumonidae per country)

Canada	16,860	Mexico	3,100
Costa Rica	6,646	Panama	347
Greenland	50	United States	188,861
Guatamala	50	West Indies	445

North America total 216,359

South America (Ichneumonidae per country)

Argentina	10,400	Paraguay	257
Bolivia	1,048	Peru	4,274
Brazil	36,264	Surinam	1,073
Chile	4,810	Trinidad	679
Colombia	938	Venezuela	4,990
Ecuador	5,900		
		South America total	70,633

Europe (Ichneumonidae per country)

Austria	2,676	Iceland	50
Bulgaria	25	Ireland	500
Cyprus	1,340	Italy	6,645
Czechoslovakia	1,053	Poland	20
Denmark	1,000	Russia	1,707
East Germany	1,000	Scotland	399
England	16,504	Spain	530
France	329	Sweden	16,551
Finland	1,000	Switzerland	83
Hungary	150	West Germany	3,500
		Europe total	55,111

Asia (Ichneumonidae per country)

Burma	400	Nepal	52
China	2,927	Siberia	150
India	7,466	South Korea	444
Japan	9,786		
		Asia total	21,225

Africa (Ichneumonidae per country)

Angola	500	Rhodesia	390
Botswana	42	Sierra Leone	2,990
Ghana	30	South Africa	22,286
Kenya	3,696	Swaziland	25
Madagascar	4,075	Tanzania	1,180
Mozambique	50	Uganda	3,000
Nigeria	1,316	Zaire	826
		Africa total	40,406

Pacific Area (Ichneumonidae per country)

Australia	12,769	New Zealand	1,016
Indonesia	1,700	Philippines	12,500
Micronesia	50	Solomons	150
New Caledonia	50	Taiwan	826
New Guinea	6,877		
		<hr/>	
		Pacific Area total	35,938
		Total tabulated, all countries	439,623

SOURCES OF SPECIMENS

Approximately 55% of the specimens in the collection were collected by the owners. The rest were received from other sources by purchase, as gifts, in exchange, or as payment for taxonomic work. Most specimens were received unmounted in papers or in alcohol. After unwanted duplicates were culled from the lots, the remaining specimens were mounted and labeled by the owners. The localities in which specimens were collected by the owners themselves are spotted on an accompanying map. A second map shows the origins of other specimen lots. Localities for minor sources are not indicated.

George Townes helped Henry and Marjorie Townes collect in the western United States in 1948. Jean Townes and David Townes helped collect in the western United States in 1947 and 1948, in the Philippines 1952-1954, and in Japan in 1954. Chloe West assisted M. Townes on a collecting trip to Europe in 1964. Specimens collected by M. Townes 1935-1937 are labeled with her maiden name (M. Chapman). The other collectors who contributed noteworthy lots are listed below.

Collectors Making Substantial Additions to the Collection,
and their Localities

Moacir Alvarenga: Brazil	C. R. Cunningham-van Someren:
Pablo Anduze: Venezuela	Kenya
Ross Arnett: Florida	R. & K. Dreisbach: Mexico &
P. P. Babiy: New York	Michigan
John Bain: New Zealand	K. M. Fender: Oregon
Ian Bampton: Kenya	H. R. Foxlee: British Columbia
Bryan Beirne: Ireland	A. E. Freeman: Ellesmere Island
Jackie Belwood: Ontario	Franco Frilli: Italy
Fred Bianchi: India	Manfredo Fritz: Argentina & Bolivia
G. E. Bohart: Colombia & Mexico	David Fullaway: Hawaii
R. M. Bohart: California & Ryukyus	D. C. Geijskes: Surinam
M. S. Bourgeois: Zaire	Fred Gess: South Africa
Sam Breland: Kentucky & Panama	Peter Ginn: Botswana & Zimbabwe
Nancy Breisch: Massachusetts	J. L. Gressitt: China, Japan, &
T. Cekalovik: Chile	Taiwan
Shui-chen Chiu: Taiwan	V. K. Gupta: India
William Clarke-MacIntyre: Ecuador	Erasmus Haeselbarth: South Africa

- Bernd Heinrich: New Guinea
 Gerd Heinrich: Angola, Austria,
 Burma, South Africa, Tanzania,
 Uganda, and West Germany
 Henry & Anne Howden: Australia
 Colombia, Costa Rica,
 El Salvador, Ecuador, Honduras,
 Mexico, Panama, & Trinidad
 Rex Jubb: South Africa
 Dan Janzen: Costa Rica
 Karl Krombein: Solomons & West
 Virginia
 C. Lamberton: Madagascar
 G. A. Lancaster: Uganda
 M. A. Lieftinck: Indonesia
 J. Lima: Brazil
 Luis Ling: Ecuador & Ontario
 Linda Losito: England
 T. C. Maa: China
 Jan Maček: Czechoslovakia
 W. R. M. Mason: Costa Rica &
 Ecuador
 Lubomir Masner: Dominican
 Republic
 G. A. Mavroumoustakis: Cyprus
 John Medler: Nigeria
 Karl Müller: Sweden
 P. S. Nathan: India
 I. Nikitin: Australia
 D. Novicky: Austria
 S. J. Oliveira: Brazil
 Denis Owen: England, Sierra Leone,
 & Uganda
 Jennifer Owen: England
 Agoroacheri Owiny: Kenya
 Reginald Painter: Mexico
 Charles Palmer: Costa Rica
 Stuart & Jarmila Peck: Japan,
 New Mexico, & Texas
 Luis Peña: Argentina, Bolivia,
 Chile, Ecuador, Paraguay,
 & Peru
 Fritz Plaumann: Brazil
 Charles Porter: Argentina
 O. Ranin: Finland
 Richard Reardon: New Jersey &
 Pennsylvania
 C. L. Remington: New Caledonia
 J. G. Rempel: Saskatchewan
 C. & M. Rettenmeyer: Panama
 Peter Rush: Alaska, Louisiana, &
 Michigan
 Kaku Sato: Japan & Korea
 J. Sedlacek & J. H. Sedlacek:
 New Guinea & Australia
 Charles Seydel: Zaire
 A. Seyrig: Madagascar
 Peter Shanahan: New Guinea
 Lionel Stange: Argentina
 J. Stibick: New Britain, New
 Guinea, & Tasmania
 B. R. Stuckenberg: South Africa
 Bo Svenson: Sweden
 Charles Townes: China & Nepal
 David Townes: Alaska, Denmark,
 Italy, Sweden, & West Germany
 George & Laura Townes:
 South Carolina
 Jean Townes: Nigeria & Oregon
 C. A. Triplehorn: Panama
 M. E. Walsh: Java
 F. H. Walz: Bolivia
 A. M. R. Wegener: Moluccas
 Mary Jane West-Eberhard: Colombia
 Vincent Whitehead: South Africa
 Felix Woytkowski: Peru

From 1938 to 1955, collections for naming were regularly received from individuals and universities, with an agreement that payment for the taxonomic work would be a selected portion of the specimens. These lots furnished a valued miscellany of minor additions to the collection. Some of the most important lots were from the collections in Columbus, Ohio; Edmonton, Alberta; Bogor, Indonesia; and the Dreisbach Collection.

Major exchanges of Ichneumonidae were transacted with the museums in Washington, Sapporo, London, Copenhagen, and East Berlin, and with the private collections of V. K. Gupta, Gerd Heinrich, H. G. M. Teunissen, and A. Roman. There were smaller exchanges with the museums in Ottawa, Paris, Leningrad, and Moscow, and with the private collections of J. Aubert and M. Constantineanu. Paratypes were included in most of these exchanges.



Map 1. Origins of specimen lots collected by Henry and Marjorie Townes



Map 2. Origins of specimen lots received from outside collectors

ARRANGEMENT OF SPECIMENS

The arrangement of the collection is taxonomic, with only a little segregation by geographic regions. All specimens are sorted to family, and in the Ichneumonidae and Anomalidae to subfamily. In certain sections, especially in the Ichneumonidae, the unstudied specimens are sorted to genera. Where specimens are named to species, a set of specimens (5 males and 6 females of each species) is kept in a main reference collection and any additional specimens are put in a "duplicate" collection. Thus, the main reference collection is synoptic, and the long series are in the "duplicate" collection. Specimens not named to species are grouped at the end of each genus, tribe, subfamily, or family, depending on how precisely they have been sorted.

HOLOTYPE SPECIMENS

Holotype specimens are kept separately from the general collection, arranged in sequence by a number assigned to each. There is a card file of the type names, giving the number under which each can be found, reference to the place of publication, and collecting data.

The numbers of types are listed below, by family and by author. This list does not include manuscript types nor types in the hands of the authors who have not yet returned them to the Townes Collection.

List of the Holotypes in each Family

Danaidae (Lepidoptera): Danaus davidi Schröder.

Tendipedidae (Diptera): 63 types of Tendipedini by H. Townes.

Bibionidae (Diptera): Bibio townesi Hardy.

Anomalidae (= Braconidae). This and all of the following families are Hymenoptera.

374 types, by C. van Achterberg (13), Clare Baltazar (2), Shama Bhat (2), Shama Bhat and V. K. Gupta (24), Max Fischer (318), John Martin (Aliolus denticulatus), W. R. M. Mason (Muesebeckia chota), Gilbert Nixon (12), and Garland Riegel (Alysia townesi).

Ichneumonidae. 1,651 types, by Douglas Allen (3), Jacques Aubert (6), Clare Baltazar (47), John Barron (14), B. D. Burks (2), R. W. Carlson (Triclistus minutus), Girish Chandra and V. K. Gupta (24), Shui-chen Chiu (Yezoceryx townesi), R. A. Cushman (Aulophion excarinatus), Clement Dasch (450), Alex Delobel (2), Ian Gauld (6), Ian Gauld and Pam Mitchell (78), David Grimble (Barylypa irona), M. L. Gupta (5), V. K. Gupta (23), V. K. Gupta and Joseph Jonathon (6), V. K. Gupta and Sharda Maheshwary (15), V. K. Gupta and D. T. Tikar (22), Gerd Heinrich (157), Rolf Hinz (3), Klaus Horstmann (6), Keith Johnson (Xiphosomella setoni), J. K. Jonathan (11), M. K. Kamath and V. K. Gupta (20), D. Kasparyan (8), Patrick Kennedy (Mnioes lunatus), G. J. Kerrich (Anisoctenion clauseni), Charles Krebs (Phytodietus rutilus), Raminder Kaur and Joseph Jonathon (9), W. R. M. Mason (22), R. T. Mitchell (Acroricnus stylator townesi), Setsuya Momoi (5), Charles Porter (63), Harry Pratt (Cryptus crassulus), G. van Rossem (7), John Schmid (3), C. N. Slobodchikoff (2), Hewson Swift (Hoplismenus teres), Timothy Tigner (3), Torolf Torgersen (5), Toichi

Uchida (8), Henry Townes (412), Henry and Marjorie Townes (103), Henry Townes and Shui-chen Chiu (48), Henry Townes and V. K. Gupta (30), and G. S. Walley (12).

Gasteruptiidae. 4 types by H. Townes.

Roproniidae. Ropronia townesi Yasumatsu.

Serphidae. 162 types, by H. Townes.

Sparasionidae (= Scelionidae). 5 types, by Lubomir Masner (2) and C. F. W. Muesebeck (3).

Bethylidae. 8 types, by H. E. Evans.

Tiphiidae. Tiphia tenuis Allen.

Sierolomorphidae. 2 types, by H. E. Evans.

Eumenidae. 2 types, by J. van der Vecht.

Vespidae. 4 types, by J. van der Vecht.

Rhopalosomatidae. 9 types, by H. Townes.

Psammocharidae. 18 types, by R. R. Dreisbach (3), H. E. Evans (7), Henry Townes (5), and Raymond Wahis (3).

Pemphredonidae. 23 types, by J. P. van Lith.

Larridae. Nitela townesorum Krombein.

Crabronidae. 17 types, by Jean Leclercq.

Hylaeidae. Hylaeus packardi Mitchell.

Lasiidae. Nomada townesi Mitchell.

Total number of types: 2,275.

The following ichneumonid types by Gauld and Mitchell were published erroneously as belonging to the Townes Collection. They belong actually to the Leiden Museum: Enicospilus amasus, E. arenus, E. fallax, E. isolde, E. laridus, E. olthopi, E. paniscus, E. sambucus, E. serphus, E. spathius, E. toxopeus, E. vernalis, E. vespus, E. zemiotes, Leptophion magus and L. nodus.

The following ichneumonid types by Townes, by Townes and Townes, or by G. S. Walley were published as belonging to the Washington Museum but are actually the property of the Townes Collection. (The reason for the incorrect publication was a misunderstanding by the Smithsonian's editor.) The types are listed below by subfamily, in the page order of publication. METOPIINAE: Chorinaeus longicalcar suturalis, C. aequalis, C. funebris clarus, C. recurvus, C. labiosus, C. emorsus, Trieces tegularis, T. sapineus litus, T. ejectus, T. aquilus, T. dentatus, Metopius krombeini epixanthus, M. vittatus, M. scapulatus, M. errantius californicus, Triclistus occidentis, T. rectus, Colpotrochia fultoni, Bothromus minoris cruralis, Carria dreisbachi californica, C. inculcata, Macromalon montanum, Hypsicera fulviceps, H. cuneata cuneata, Exochus elimatus, E. montivagus, E. ochreatus, E. spinalis, E. atriceps atricornis, E. sulcatus, E. tenebrosus, E. armillosus, E. cnemidotus, E. capnodes, E. canidens, E. quadradens, E. mesodon, and E. ventricosus. EPHIALTINAE: Anastelgis terminalis, Zaglyptus arizonicus, Laufeia navajo, Acrodactyla jubata, A. ocellata, Scambus arizonensis, S. subtilis, S. tenebrosus, Eruga atrata, Piogaster maculata, Zatypota patellata, Z. favosa, Z. exilis, Z. luteipes, Z. crassipes, Itoplectis fustiger, and Coccygomimus stricklandi. XORIDINAE: Aplomerus arugosus, Odontocolon pullum, O. depressum, O. sierrae, O. parvum, O. dreisbachi, Xorides pictus, and X. semirufus. LABIINAE: Labena grillator ochreata. ACAENITINAE: Coleocentrus manni coloradensis. GELINAE: Agrothereutes montanus, A. pallipennis, A. linnae linnae, A. linnae pacifica, A. albicollaris clypeator, A. notata sierrae, Pycnocyptus alexanderi,

Ischnus laurae, I. velutinus, I. laevifrons, I. politus, Habrocryptoides pictus,
H. lumbarius, Trachysphyrus fasciatus, T. labrator satoi, T. lochmaius, T.
luctuosus atrifemur, T. mentigus mentigus, T. krombeini, T. rugifrons,
Lanugo schlingeri, Compsocryptus unicolor, Joppidium densum, Trychosis
semirubra arizonica, T. kathrynae, T. anagnus, Diapetimorpha brunnea,
Listrognathus bicolor, L. femorata, Cryptohelcostizus nigricans, and
Helcostizus subrectus.

A COMPARISON OF THE TOWNES COLLECTION OF PARASITIC HYMENOPTERA WITH THAT OF THE SMITHSONIAN INSTITUTION

A comparison of a sizable insect collection with that of the Smithsonian Institution is of interest because the Smithsonian Collection surpasses others in the United States in the same manner that the Library of Congress surpasses other libraries.

The Townes and the Smithsonian collections can be compared in several areas - size, species and geographic representation, quality of specimens, curating, and type material. Size (number of specimens) is the only thing that can be objectively quantified, and that is done below. The table enumerates specimens that are mounted, labeled, and sorted at least to family. Specimens less completely processed are considered not yet available. The comparisons refer only to the parasitic Hymenoptera as the Townes Collection has no pretensions elsewhere. Counts were made of the Townes Collection in December 1981, of the Smithsonian Collection in June 1982.

The Smithsonian Collection has been forming for 100 years, receiving specimens from private individuals, and from a great variety of state and government agencies. Its specimens are approximately 30% from outside of the United States, the other 70% mostly from the eastern United States. Its special strengths are in type specimens and in reared specimens.

The Townes Collection was assembled over a 50 year period, with substantial help from about 50 contributors. Its main goal was to gather a representation of the world fauna of certain families of parasitic Hymenoptera. The specimens are approximately 60% from outside of the United States. There are almost no reared specimens. There is a substantial number of types but not nearly as many as in the collection at the Smithsonian.

In numbers, the Townes Collection is 72% as large as that of the Smithsonian, as tabulated below. It has a lead in 50 of the families and subfamilies tabulated and is behind in 36. Its special strength is in the family Ichneumonidae, in the numbers of foreign specimens, and in its good condition. Its special weakness is in its representation in the Chalcidoidea. Although only 72% as large by numbers as the Smithsonian Collection it is about the same in research value, since about 15% of the Smithsonian Collection (96,000 of Ichneumonidae and Braconidae) is not sorted well enough to be accessible and another 15% consists of excessively long series of minor use for taxonomy.

The Townes Collection is scheduled to move to Gainesville, Florida where it will be associated with the Gupta Collection and the Florida State Collection of Arthropods. These two collections contain an estimated 75,000, and 60,000 specimens of parasitic Hymenoptera respectively. The three collections combined will total approximately the same as the Smithsonian Collection.

NUMERICAL COMPARISON OF TOWNES AND SMITHSONIAN COLLECTIONS

	Townes Collection (509, 557)	Smithsonian Collection (399, 597)
Ichneumonoidea		
Apozygidae	1	0
Braconidae	(60, 112)	(180, 899)
Spathiinae	3, 854	16, 997
Vipiinae	8, 097	21, 088
Hormiinae	943	2, 200
Rogadinae	6, 214	8, 859
Meteorideinae	10	15
Helconinae	1, 079	1, 172
Zeleanae	479	347
Macrocentrinae	2, 346	5, 562
Amacrocentrinae	4	0
Xiphozelinae	3	2
Braconinae	4, 083	8, 170
Opiinae	2, 225	7, 287
Alysiinae	3, 902	5, 012
Sigalphinae	49	200
Cheloninae	5, 404	9, 962
Adeliinae	12	72
Microgastrinae	13, 002	32, 984
New subfamily	16	0
Ichneutinae	542	302
Blacinae	3, 869	8, 092
Ypsitocerinae	0	57
Neoneurinae	21	88
Leiophroninae	3, 958	8, 364
Not sorted	0	44, 067
Aphidiidae	1, 690	11, 164
Hybrizontidae	67	46
Ichneumonidae	(447, 391)	(206, 988)
Ephialtinae	24, 398	14, 404
Tryphoninae	24, 445	5, 700
Eucerotinae	668	233
Labiinae	1, 556	350
Adelognathinae	529	52
Xoridinae	1, 684	478
Agriotypinae	4	12
Gelinae	110, 103	54, 038
Lycorininae	275	102
Stilbopinae	136	11
Neorhacodinae	7	8
Banchinae	23, 884	6, 910
Scolobatinae	23, 459	3, 854
Porizontinae	70, 048	19, 794
Cremastinae	9, 970	5, 424
Phrudinae	149	27

	Townes Collection	Smithsonian Collection
Tersilochinae	3, 458	1, 643
Ophioninae	12, 295	7, 380
Mesochorinae	7, 744	1, 964
Metopiinae	10, 085	1, 759
Anomaloninae	8, 288	4, 621
Acaenitinae	791	522
Microleptinae	15, 258	765
Orthopelmatinae	324	548
Collyriinae	84	112
Orthocentrinae	10, 818	804
Diplazontinae	10, 021	2, 174
Ichneumoninae	76, 890	21, 440
Not sorted	0	51, 859
Stephanidae	288	497
Megalyridae	28	9
Chalcidoidea	(13, 239)	(262, 778)
Torymidae	1, 340	22, 073
Pteromalidae	3, 745	59, 659
Eurytomidae	939	63, 258
Chalcididae	3, 828	16, 620
Leucospidae	129	719
Eucharitidae	509	2, 765
Eupelmatidae	426	10, 617
Encyrtidae	274	25, 375
Eulophidae	1, 755	57, 575
Mymaridae	296	4, 019
Cynipoidea	(3, 421)	(11, 213)
Ibaliidae	84	249
Liopteridae	15	45
Figitidae	923	2, 595
Eucoilidae	2, 399	8, 324
Alloxystidae	124	669
Evanioidea	(11, 339)	(4, 008)
Evaniidae	7, 958	2, 780
Aulacidae	1, 275	601
Gasteruptiidae	2, 106	627
Pelecinoidea	(255)	(126)
Pelecinidae	255	126
Serphoidea	(15, 020)	(40, 745)
Roproniidae	86	21
Austroniidae	3	1
Monomachidae	375	30
New family	1	0
Heloridae	142	95
Serphidae	4, 201	2, 521
Diapriidae	7, 583	12, 115
Scelionidae	2, 081	17, 592
Platygastridae	548	8, 370

	Townes Collection	Smithsonian Collection
Ceraphronoidea	(275)	(4, 109)
Ceraphronidae	71	1, 934
Megaspilidae	204	2, 175
Trigonaloidea	(340)	(84)
Trigonalidae	340	84
Chrysoidea	(10, 024)	(9, 665)
(except Chrysididae)		
Plumariidae	190	20
Bethylidae	5, 928	7, 212
Scolebythidae	19	6
Sclerogibbidae	118	15
Dryinidae	3, 613	2, 358
Embolemidae	159	53
Scolioidea	(10, 518)	(41, 851)
(except Mutillidae & Sapygidae)		
Tiphiidae	9, 574	30, 772
Sierolomorphidae	149	65
Scoliidae	795	11, 014
Psammocharoidea	(355)	(130)
(except Psammocharidae)		
Rhopalosomatidae	355	130

Total parasitic Hymenoptera 561, 107

774, 206